



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

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JUN 17 2004

REPLY TO THE ATTENTION OF

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CERTIFIED MAIL

RETURN RECEIPT REQUESTED

Joel Hubscher  
Shell Oil Company  
Legal Services US  
910 Louisiana, OSP 1120  
Houston, TX. 77002

Tina Archer  
Greensfelder, Hemker & Gale, P.C.  
10 South Broadway, Suite 2000  
St. Louis, Missouri 63102

Jeffrey Dill  
Corporate Counsel  
The Premcor Refining Group, Inc.  
Legal Department  
1700 E. Putnam Avenue, Suite 500  
Old Greenwich, Connecticut 06870

Edward W. Dwyer  
Hodge, Dwyer, Zeman  
3150 Roland Avenue  
Springfield, Illinois 62705-5776

Ronald J. Ganim  
Senior Attorney  
BP America Inc.  
Mail Code 4 West  
4101 Winfield Road  
Warrenville, IL 60555

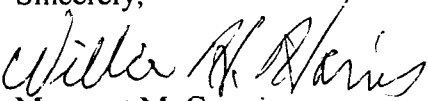
Re: The Hartford Area Hydrocarbon Plume Site

Gentlemen and Ms. Archer:

Enclosed please find a copy of the United States Environmental Protection Agency's (EPA) response to comments received on the Administrative Order on Consent (AOC) for the Hartford Area Hydrocarbon Plume Site. Pursuant to paragraph 110 of the AOC, this is notification that EPA has determined that the AOC should be made effective in its present form. Therefore, the AOC effective date is the latest date this notice is received by any Respondent.

Thank you for your cooperation in this matter. If you have any questions, please contact Brian Barwick of EPA's Region 5 Office of Regional Counsel at (312) 886-6620.

Sincerely,

  
for Margaret M. Guerriero

Director, Waste, Pesticides, and Toxics Division

Enclosure

cc: Steve Faryan (SE-5J)  
Kevin Turner (SE-5J)  
Bob Egan (DW-8J)  
Beverly Kush (SE-5J)  
Padma Klejwa (C-14J)  
Mike Joyce (P-19J)  
Sally Jansen (SE-5J)  
James Morgan, IAG  
John Waligore, IEPA Springfield  
Mike Roubitchek, IEPA Springfield  
Chris Cahnovsky, IEPA Collinsville

## **RESPONSE TO COMMENTS FOR THE HARTFORD AREA HYDROCARBON PLUME SITE**

On March 25, 2004, the U.S. Environmental Protection Agency (EPA) held an availability session and a public meeting at the Hartford Community Center in Hartford, Illinois to provide information, answer questions and accept comments regarding the environmental investigation and clean-up for the Hartford Area site. Representatives of the Illinois Environmental Protection Agency (IEPA), Illinois Attorney General's Office (IAGO), and Illinois Department of Public Health (IDPH) also attended and participated in both sessions.

At the public meeting, EPA explained the Administrative Order on Consent (AOC), which requires the Atlantic Richfield Company, Equilon Enterprises, LLC, and PREMCOR Refining Group (collectively "the Hartford Working Group") to investigate and address contamination below portions of Hartford. EPA also announced that it would be accepting written comments on the AOC until April 7, 2004.

This document has been prepared in response to comments received at the public meeting and during the comment period. This Response to Comments includes the comments submitted to EPA and EPA's responses. No changes have been made to the AOC based on these comments.

### **COMMENTS RAISED AND THE AGENCY'S RESPONSE**

#### **COMMENT**

Several commenters raised concerns about the timetable for selecting, implementing and completing a final remedy versus interim measures implemented while the investigation proceeds. Commenters also expressed concern about protection of residents, including relocation if necessary, while the multiple aspects of the project are accomplished. One commenter urged the government to use all authority necessary to protect residents while they await a permanent remedy.

#### **RESPONSE**

EPA's first priority is protection of human health and the environment. In this case, EPA believes that the interim measure requirements of the AOC will protect residents while an expedited but comprehensive investigation is conducted and until the final remedy is designed, implemented, and effective.

The interim measures include temporary actions such as replacement of the existing vapor extraction system wells, needs assessments, installation of in-home vapor mitigation systems, and emergency response. While temporary, these systems and processes may be required for a substantial period of time. However, Hartford residents should understand that these interim measures are not by themselves the final remedy.

In response to comments received on the AOC, and as more specifically described later in this document, EPA and HWG are making certain improvements to the needs assessment process and HWG will be offering in-home vapor mitigation systems to every residence within the affected area plus a buffer zone. With these systems, and the summer 2004 replacement of the existing vapor extraction system wells, EPA believes that the health and welfare of Hartford residents will be protected until the final remedy is completed.

Designing a final remedy that substantially removes the hydrocarbon plume requires a comprehensive investigation of subsurface conditions in the Village of Hartford. Although the problem has been studied previously, the data from those studies is not sufficient to fully characterize the nature and extent of the plume. Designing and implementing a final remedy without a complete understanding of the nature and extent of the problem could result in failure of the final remedy.

Unfortunately, a proper and comprehensive investigation takes time. In order to save time, EPA took the unusual step of requesting that HWG start conducting investigation activities while the AOC terms were negotiated. Usually investigation activities would not begin until the AOC was effective. As a result, HWG has been conducting investigation activities under EPA oversight since October 2003 and is scheduled to complete the investigation by December 31, 2004. The HWG was under no legal obligation to start investigation activities in October 2003 but did so in good faith cooperation with EPA.

The final remedy will be selected early next year based on the results of the comprehensive investigation. Therefore, EPA cannot now say with certainty what the final remedy will be or how long it will take to complete. Cleaning up subsurface contamination can take many years to complete. Consequently, EPA cannot now reliably estimate the duration of the interim measures but it is possible that not all of the interim measures will be required for the entire duration of the final remedy.

#### **COMMENT**

A commenter questioned whether the emergency response provisions of the AOC were protective considering what is already known about the contamination below Hartford residences.

#### **RESPONSE**

The AOC requires both interim actions and emergency actions in response to vapor complaints. Interim actions include rehabilitation of the existing Soil Vapor Extraction System and installation of in-home vapor mitigation systems. Emergency actions in response to vapor complaints include such things as temporary relocation, venting of homes and venting of sewers. EPA believes that these interim actions, together with the emergency actions, have worked and will continue to work as designed to protect Hartford Residents in the interim, until the full scale cleanup systems can be installed, tested and put into full operation.

**COMMENT**

How does the Needs Assessment process protect residents who may have become accustomed to odors or elect not to report vapor problems in their homes? Will home air sampling be conducted on a continuous basis?

**RESPONSE**

The HWG will offer in-home vapor mitigation systems to all residents within the affected area plus a buffer zone. Therefore, any resident concerned that they may have become accustomed to odors, or has until this time elected not to report vapor problems, can still choose to have a vapor mitigation system installed in their home.

Home air sampling in Hartford will continue. In addition to sampling in response to vapor/odor complaints, periodic indoor air sampling at select residences has been performed during the last year by the IEPA and the IDPH. Also, the AOC requires HWG to conduct air monitoring when responding to vapor complaints, during the needs assessment process and both before and after installation of in-home vapor relief systems. Air monitoring will continue throughout the project to assess whether the in-home systems and rehabilitated vapor extraction system are operating efficiently.

**COMMENT**

What is the follow-up if the Needs Assessment does not show dangerous vapor levels?

**RESPONSE**

Needs assessments can occur on a case-by-case basis (e.g., in response to a vapor complaint) or as part of a systematic survey of Hartford residences. For example, HWG conducted a systematic survey this spring of the 52 residences to which they obtained access. However, EPA is fully aware that vapor intrusions are usually associated with conditions such as a high river level, high water table, heavy rain event or vapors in sewers. Consequently, EPA and the HWG plan to conduct additional systematic needs assessments under varying conditions. Additionally, the HWG will offer in-home vapor mitigation systems to all residents within the affected area plus a buffer zone. Therefore, residents concerned that a needs assessment did not, or would not, detect an intermittent but hazardous condition can elect to have a vapor mitigation system installed in their home.

**COMMENT**

Some commenters expressed reservations about oil company representatives entering homes and asked whether it is possible for EPA or the Illinois Environmental Protection Agency to perform the Needs Assessments.

**RESPONSE**

EPA, IEPA, or their contractors will be present during the HWG's contractor's interviews of residents, installation of in-home systems, and when otherwise requested or needed during installation, maintenance and monitoring of all the systems required under the AOC.

**COMMENT**

Numerous calls to report vapors in homes and other buildings will put an undue burden on the town's volunteer fire department.

**RESPONSE**

HWG has provided the fire department vapor detection equipment, blowers for ventilating homes and sewers, and a new generator to operate the blowers. In addition, the HWG met with the Village of Hartford on May 5, 2004 to brief council members on the cleanup and to discuss the possibility of HWG paying for the Village of Hartford's costs, including those of the fire department, incurred in responding to vapor complaints. The HWG asked the Village of Hartford to put together cost information and will consider reimbursing the Village.

**COMMENT**

Several commenters asked about responsibility for installation, maintenance and operating costs, and eventual removal of the residential vapor mitigation systems. Commenters also questioned how the systems are evaluated to determine effectiveness, the duration of use of the systems, and what specific equipment would be used for testing.

**RESPONSE**

HWG, with EPA and IEPA oversight, will be responsible for all installation, maintenance and operating costs of the in-home vapor mitigation systems. The systems will be evaluated by testing to see how effective the units are at preventing the migration of vapors into homes. This testing includes the collection of system performance measurements (e.g., vacuum tests) to assess the efficiency of each system.

**COMMENT**

A commenter asked whether operating the residential vapor mitigation systems may pose a risk of fire or explosion if exposed to an ignition source. Another commenter expressed concern about health effects from the vented vapors.

**RESPONSE**

The residential vapor mitigation systems will not pose a risk of fire or explosion. The current pilot systems stacks have been monitored and volatile organic emissions are in the low part per million level and no explosive levels have been detected.

EPA acknowledges the comment about health effects from vented vapors and is working with the HWG and IDPH to develop an outdoor air monitoring protocol to evaluate volatile organic levels in the ambient air after the installation of the in-home systems. These air readings will be evaluated against IDPH's previously recorded baseline emissions for the Village of Hartford. The in-home systems are vapor relief systems and are low air flow systems and are not designed to pull a large mass of contamination. Under federal and state environmental laws, permits are not required on these in-home systems nor are any carbon filters or other filters. This is similar to a radon reduction system.

**COMMENT**

Will installation of residential vapor mitigation systems through the foundation of homes cause structural weakness of the foundations?

**RESPONSE**

The installation of the in-home systems will not have any effect on the structural integrity of the homes. Certified, insured and bonded contractors will install the systems with oversight from the HWG and EPA and/or IEPA representatives. The HWG, EPA and/or IEPA representatives, and the home owner, will inspect each installation.

**COMMENT**

What is the noise level of the in-home vapor mitigation system and how will it affect the looks of my house?

**RESPONSE**

The electric blowers will be installed outside the home or in some cases may be a window blower unit. The noise level will be no louder than a window fan and should not cause any inconvenience. Some elements of the in-home system (e.g., the blower unit and some PVC pipe) will be located outside the home. HWG will locate these exterior elements as inconspicuously as possible.

**COMMENT**

EPA should take a stronger stance and require that a fully effective residential vapor mitigation system be offered to everyone or require the responsible parties to temporarily relocate affected residents.

**RESPONSE**

The HWG will offer an in-home vapor ventilation system to every residence within the affected area and a buffer zone. HWG will distribute a letter to residents outlining the process for requesting installation of a system. Specifically, in response to a homeowner's request, HWG will conduct an assessment of the residence, patch any cracks in the walls and floors, inspect utilities and check sewer traps, and conduct a construction walk through to see where the ventilation system can be mounted. Each home will have a rough construction sketch completed and a permission form authorizing the work to be done will be presented to the homeowner for their signature. The initial system may be a window blower with a fresh air intake placed in the basement or crawl space of a home. A blower system will be installed in each home and will be evaluated after installation to check its effectiveness. If the blower system does not provide the necessary vapor control then a different system will be installed such as the sub-slab system described at the public meeting and in EPA's fact sheet for that meeting.

**COMMENT**

One commenter expressed concern that the residential vapor mitigation systems are only a "band-aid" solution.

**RESPONSE**

The residential vapor migration systems are an interim action and will also be used as a backup for venting vapor from residential, industrial or municipal buildings in Hartford. These in-home systems can be installed more quickly than other full-scale remediation systems and will provide necessary venting of hydrocarbon vapors. In addition, the in-home systems will provide an essential backup system to the rehabilitated existing vapor extraction system as well as the final remedy system (which will address the area-wide contamination). A backup system will be critical in case of high water table or rain events rendering these area-wide systems less efficient, or temporarily inoperable.

**COMMENT**

A commenter stated that a vapor extraction system installed in the early 1990s failed and expressed concern that this method may not be successful based on this previous failure.



**RESPONSE**

With EPA and IEPA oversight, HWG has completed an evaluation of the vapor extraction system that was installed in the 1990's. HWG's report, which is titled "Soil Vapor Extraction Evaluation" and is available in the Hartford library, states that the vapor recovery wells were plugged with a black oily material and also noted that some of the equipment at the blower units had corroded and was blocking air flow. In short, it appears that lack of maintenance on the system significantly reduced its effectiveness. It also appears that the original design may not have been adequate to clean up the entire contaminated area.

Soil vapor extraction technology has been proven very effective for collecting hydrocarbons from soils with a high permeability such as the sand found beneath Hartford. The HWG conducted and prepared the "Soil Vapor Extraction Pilot Test Report" and found that with the installation of new vapor recovery wells, coupled with upgrades to the blower and thermal destruction unit, would collect vapors 100 times more effectively than the existing system.

**COMMENT**

A commenter questioned the ability of a vapor extraction system to completely remove the dangers associated with the petroleum compounds from the soil and groundwater.

**RESPONSE**

The work to be performed under the AOC requires HWG to install, operate and maintain recovery systems that will prevent vapor intrusion into the homes in the Hartford area. Currently, this will require the installation of in-home systems, improvement and expansion of the vapor recovery system, and the design and pilot testing of an active hydrocarbon recovery system. These three technologies will be run concurrently and will prevent vapor intrusion into the residential homes. Other work may be identified during the investigations that may require immediate attention. For example, if vapors are entering homes via the sewer system or another pathway, HWG will be required to address the condition.

**COMMENT**

Will there be subsidence problems resulting from pumping of petroleum compounds out of the ground?

**RESPONSE**

No, there will not be any subsidence problems from pumping of the petroleum compounds. The geology of the area that underlies Hartford is known as the American Bottoms and is made up of sediment with sand layers beneath. The oil does not exist in a pool or underground cavern but is found in the spaces between the sand grains. As the petroleum product is pumped out it would be replaced by adjacent petroleum product, or when the petroleum is removed these spaces

between the sand grains will be filled with groundwater. These systems operate successfully at other similar sites without any subsidence problems.

### **COMMENT**

Several comments were received regarding the safety of the town's water supply, including the safety of the municipal wells, frequency of sampling of the supply wells, and whether contamination could migrate into the pipes that carry water to residences.

### **RESPONSE**

The HWG was required to install 5 sentinel wells in the recharge area of the Hartford Municipal Wells to serve as an early warning system to protect the drinking water of Hartford. The sentinel wells were sampled in April of 2004 and analytical results showed no detection of hydrocarbon compounds or other Volatile Organic Compounds.

In addition, the Village of Hartford drinking water wells are sampled for a list of volatile organics, including substances such as benzene, on at least an annual basis. The most recent round of such sampling was conducted in March 2004 and no volatile organic contamination was detected. Citizens can access more detailed information concerning the Village of Hartford water supply system by contacting the Illinois Environmental Protection Agency at (618) 346-5120 (ask for a public water supply representative) or via the internet at:

[http://www.epa.state.il.us/drinking-water-watch/JSP/WaterSystemDetail.jsp?tinwsys\\_is\\_number=717343&tinwsys\\_st\\_code=IL&wsnumber=IL1190500](http://www.epa.state.il.us/drinking-water-watch/JSP/WaterSystemDetail.jsp?tinwsys_is_number=717343&tinwsys_st_code=IL&wsnumber=IL1190500)

Contamination cannot migrate into the Village water supply pipes since the pipes are under constant pressure.

### **COMMENT**

A commenter asked whether it is safe to plant vegetable or fruit gardens if their property is in the affected area.

### **RESPONSE**

Garden vegetables would only be able to uptake the vapor component since the contamination is well below the root zone of garden plants. Fruit trees may come into contact with greater hydrocarbon concentrations in either soil gas or groundwater. IDPH representatives believe that the potential uptake and subsequent translocation and storage in fruits and vegetables would not present a significant exposure source to residents.

Hydrocarbon contamination has been found in some areas at depths of 10 feet below ground surface and the hydrocarbons are generally found floating on top of the groundwater table at about 31 feet below ground surface. If a resident observes an oil sheen or petroleum smell in the soil of their garden then samples could be collected to determine if there are any health issues.

#### **COMMENT**

Several commenters questioned the timing of EPA's involvement and issuance of the AOC. One commenter asked whether the recent action was related to the closing of the Premcor facility and the purchase of the facility equipment.

#### **RESPONSE**

The timing of the issuance of the AOC was not affected by the closing of the Premcor facility or sale of equipment.

#### **COMMENT**

What is the cost of the planned activities and who will pay for it?

#### **RESPONSE**

All of the costs of complying with the AOC will be paid for by the HWG. In addition, EPA oversight costs and contractor oversight costs will be paid for by HWG.

Since the work is being conducted by the HWG, there is no cost estimate for completion of the cleanup work. In addition, no cost can be estimated until the final design of the active collection system that will remove the petroleum layer. Once the petroleum removal technology is designed, tested and installed, a final completion report will be prepared by the HWG.

#### **COMMENT**

What happens if the refineries leave? Will the government take over the project and pay the costs?

#### **RESPONSE**

The HWG is required by the AOC to design, install, and operate all of the systems to prevent vapor intrusion to the homes. Even if the companies leave the area, they are still required under the AOC to complete the cleanup work and are subject to the deadlines and penalties outlined in the AOC.

**COMMENT**

Will any testing be done on the south side of town during the investigation?

**RESPONSE**

As explained in response to an earlier comment, the Village of Hartford drinking water wells are sampled for volatile organics, including substances such as benzene, on at least an annual basis. The most recent round of sampling was conducted in March 2004 and no volatile organics were detected in the drinking water wells. In any event, EPA will review records and look for other information concerning releases in southern Hartford that may threaten the drinking water wells.

**COMMENT**

Why has it taken so long to get anything done?

**RESPONSE**

EPA has been working diligently on providing relief to the citizens of Hartford since the site was referred to the Emergency Response Branch in the summer of 2003. EPA required that the investigation work and pilot testing be conducted concurrently with the negotiation of the order. This was agreed to by the HWG and it is unprecedented to have a large part of the investigation completed prior to signing of the Order. This has greatly speeded the process of installing the appropriate collection technology in the areas where the hydrocarbon is located. This will allow for the most effective collection of the product and provide the best alternative to protect Hartford citizens.

**COMMENT**

Several commenters stated that property values have decreased because of the contamination, and asked whether buyouts would occur.

**RESPONSE**

Buyouts of residential property are not a requirement of the Order. This does not preclude buyouts in the private class action law suits that have been filed.